WHAT IS CLAIMED IS:

1. A transgenic, non-human animal comprising a cell comprising a nucleic acid molecule comprising at least a first signal sequence and a second signal sequence and a recombinase gene operably linked to an expression control sequence, said first and second signal sequences being positioned to mediate excision or inversion of a sufficient portion of either the recombinase gene or the expression control sequence to inactivate or decrease recombinase activity when the first and second signal sequences are contacted with a recombinase.

2. The transgenic, non-human animal of claim 1, wherein said target gene encodes a protein to be made in a targeted secretion of the animal.

3. A transgenic plant comprising a cell comprising a nucleic acid molecule comprising at least a first signal sequence and a second signal sequence and a recombinase gene operably linked to an expression control sequence, said first and second signal sequences being positioned to mediate excision or inversion of a sufficient portion of either the recombinase gene or the expression control sequence to inactivate or decrease recombinase activity when the first and second signal sequences are contacted with a recombinase.

4. The transgenic plant of claim 3, wherein said plant comprises a first and a second tissue, and said sequence encoding said recombinase is expressed in said first tissue, but not in said second tissue.

5. The transgenic plant of claim 4, wherein said first tissue of said plant is edible and said second tissue of said plant is inedible.

6. A method for modulating a target gene in a cell, said method comprising introducing into said cell:

a first nucleic acid molecule comprising a recombinase gene operably linked to an expression control sequence and signal sequences recognized by a recombinase,

a second nucleic acid molecule comprising a target gene and signal sequences recognized by said recombinase,

wherein said recombinase, when expressed in said cell, excises a sequence in said second nucleic acid molecule that is located between said signal sequences in said second nucleic acid molecule, and the excision results in modulation of expression of said target gene.

7. The method of claim 6, wherein said cell is in an animal.

8 The method of claim 7, wherein said animal is a mammal.

9 The method of claim 8, wherein said mammal is a human.

10 The method of claim 8, wherein said mammal is a mouse, a goat, a pig, or a cow.

11 The method of claim 6, wherein said target gene encodes a diagnostic or therapeutic agent.

12 The method of claim 6, wherein said cell is in a plant.

13 The method of claim 12, wherein said target gene encodes a disease resistance protein.

14 The method of claim 12, wherein expression of said recombinase is induced in said plant within one week prior to harvest.

15 The method of claim 12, wherein said plant comprises a first and a second tissue, and said recombinase is expressed in said first tissue, but not in said second tissue.

16 The method of claim 15, wherein said first tissue of said plant is edible and said second tissue of said plant is inedible.

17 The method of claim 6, wherein said signal sequences in said second nucleic acid molecule are in direct orientation with respect to one another.

18 The method of claim 17, wherein said signal sequences in said second nucleic acid molecule flank said target gene, so that expression of said recombinase results in excision of said target gene, and inactivation of expression of said target gene.

19 The method of claim 17, wherein said signal sequences in said second nucleic acid molecule flank a positive regulatory element of said target gene, so that expression of said

recombinase results in excision of said positive regulatory element, and inactivation of expression of said target gene.

20. The method of claim 17, wherein said signal sequences in said second nucleic acid molecule flank a negative regulatory element of said target gene, so that expression of said recombinase results in excision of said negative regulatory element, and activation of expression of said target gene.

21. The method of claim 6, wherein said signal sequences in said first nucleic acid molecule flank said region encoding said recombinase.

22. The method of claim 6, wherein said signal sequences in said first nucleic acid molecule flank a positive regulatory element of said region encoding said recombinase.

23. The method of claim 6, wherein said first nucleic acid molecule and said second nucleic molecule are present in the same vector.

24. The method of claim 6, wherein said first nucleic acid molecule and said second nucleic acid molecule are present in separate vectors.

25. The method of claim 6, wherein said recombinase is selected from the group consisting of a *cre* recombinase and a Flp recombinase and the signal sequence is selected from the group consisting of lox sequences and FRT sequences.

26. A cell comprising a first nucleic acid molecule comprising a first signal sequence and a recombinase gene operably linked to an expression control sequence and a second nucleic acid molecule comprising a second signal sequence and a target gene, said first and second signal sequences being positioned to mediate strand exchange between the first and second nucleic acid molecules, thereby modulating the expression of said recombinase gene and said target gene when the first and second signal sequences are contacted with a recombinase.

27. The cell of claim 26, wherein said recombinase is selected from the group consisting of a *cre* recombinase and a Flp recombinase and the signal sequence is selected from the group consisting of lox sequences and FRT sequences.

28. The cell of claim 26, wherein said signal sequences in said first and said second nucleic acid molecule are in direct orientation with respect to one another.

29. The cell of claim 26, wherein said signal sequences in said first and said second nucleic acid molecule are in inverted orientation with respect to one another.

30. A method for modulating a target gene in a cell, said method comprising introducing into said cell:

a first nucleic acid molecule comprising a recombinase gene operably linked to an expression control sequence and a first signal sequence recognize by a recombinase,

a second nucleic acid molecule comprising a target gene and a second signal sequence recognize by said recombinase,

wherein said first and second signal sequences being positioned to mediate strand exchange between the first and second nucleic acid molecules, thereby modulating the expression of said recombinase gene and said target gene when the first and second signal sequences are contacted with a recombinase.

31. The cell of claim 30, wherein said recombinase is selected from the group consisting of a *cre* recombinase and a Flp recombinase and the signal sequence is selected from the group consisting of lox sequences and FRT sequences.

32. The cell of claim 30, wherein said signal sequences in said first and said second nucleic acid molecule are in direct orientation with respect to one another.

33. The cell of claim 30, wherein said signal sequences in said first and said second nucleic acid molecule are in inverted orientation with respect to one another.

34. A library of cells comprising a long terminal repeat and a recombinase recognition sequence integrated into the genome of each of the cells.